## AMENDMENT TO THE CLAIMS

1. (Currently amended) A first-in, first-out memory device comprising:

a ~~memory array~~ ring buffer having a plurality of address locations for storing incoming data;

a boundary pointer for indicating an end point of a buffer area formed within said ~~memory array~~ ring buffer into which said incoming data can be stored; and

a controller for adjusting the value of said boundary pointer in accordance with the amount of incoming data to be stored,

wherein said boundary pointer is capable of changing in a circulating fashion within the plurality of address location of the ring buffer.

2. (Currently amended) The first-in, first-out memory of claim 1 further comprising:

a read pointer, coupled to said ring buffer ~~memory array~~, for indicating a read address of said buffer area; and

a write pointer, coupled to said ring buffer ~~memory area~~, for indicating a write address of said buffer area.

3. (Canceled)

4. (Currently amended) The first-in, first-out memory of claim [[3]] 1, wherein said controller operates to move said boundary pointer so as to increase the size of said buffer on the basis of a 1:1 correspondence with the amount of incoming data.

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5. (Original) The first-in, first-out memory of claim 1, wherein said controller dynamically varies the value of said boundary pointer during operation in response to the amount of said incoming data to be stored.

6. (Currently amended) A first-in, first-out memory device comprising:

a ~~memory array~~ ring buffer, which acts as one ring, having a plurality of address locations for storing incoming data;

a first boundary pointer for indicating an end point of a first buffer area formed within said ~~memory array~~ ring buffer into which said incoming data can be stored;

a second boundary pointer for indicating an end point of a second buffer area formed within said ~~memory array~~ ring buffer into which said incoming data can be stored; and

a controller for adjusting the value of said first boundary pointer and said second boundary pointer in accordance with the amount of incoming data to be stored.

7. (Currently amended) The first-in, first-out memory of claim 6 further comprising:

a first read pointer, coupled to said ring buffer ~~memory array~~, for indicating a read address of said first buffer area;

a first write pointer, coupled to said ring buffer ~~memory area~~, for indicating a write address of said first buffer area

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a second read pointer, coupled to said ring buffer ~~memory array~~, for indicating a read address of said second buffer area; and

a second write pointer, coupled to said ring buffer ~~memory area~~, for indicating a write address of said second buffer area.

8. (Canceled)

9. (Currently amended) The first-in, first-out memory of claim [[8]] 6, wherein said controller operates to move said first boundary pointer and said second boundary pointer so as to increase the size of said first buffer and said second buffer on the basis of a 1:1 correspondence with the amount of incoming data.

10. (Original) The first-in, first-out memory of claim 6, wherein said controller dynamically varies the value of said first boundary pointer and said second boundary pointer during operation in response to the amount of said incoming data to be stored.

11. (Currently amended) A method of storing data in a first-in, first-out memory device, said method comprising the steps of:

providing a ~~memory array~~ ring buffer having a plurality of address locations for storing incoming data;

defining a boundary pointer for indicating an end point of a buffer area formed within said ~~memory array~~ ring buffer into which said incoming data can be stored; and

adjusting the value of said boundary pointer in accordance with amount of incoming data to be stored,

wherein said boundary pointer is capable of changing in a circulating fashion within the plurality of address location of the ring buffer.

12. (Original) The method of storing data in a first-in, first-out memory of claim 11, further comprising the step of:

defining a read pointer for indicating a read address of said buffer area; and

defining a write pointer for indicating a write address of said buffer area.

13. (Canceled)

14. (Currently amended) The method of storing data in a first-in, first-out memory of claim [[13]] 11, wherein said boundary pointer is modified so as to increase the size of said buffer on the basis of a 1:1 correspondence with the amount of incoming data.

15. (Original) The method of storing data in a first-in, first-out memory of claim 11, wherein the value of said boundary pointer is dynamically varied during operation in response to the amount of said incoming data to be stored.

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16. (Currently amended) A method of storing data in a first-in, first-out memory device, said method comprising the steps of:

defining a ~~memory array~~ ring buffer, which acts as one ring, having a plurality of address locations for storing incoming data;

defining a first boundary pointer for indicating an end point of a first buffer area formed within said ~~memory array~~ ring buffer into which said incoming data can be stored;

defining a second boundary pointer for indicating an end point of a second buffer area formed within said ~~memory array~~ ring buffer into which said incoming data can be stored; and

adjusting the value of said first boundary pointer and said second boundary pointer in accordance with the amount of incoming data to be stored.

17. (Original) The method of storing data in a first-in, first-out memory of claim 16 further comprising the step of:

defining a first read pointer for indicating a read address of said first buffer area;

defining a first write pointer for indicating a write address of said first buffer area

defining a second read pointer for indicating a read address of said second buffer area; and

defining a second write pointer for indicating a write address of said second buffer area.

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18. (Canceled)

and

19. (Currently amended) The method of storing data in a first-in, first-out memory of claim [[18]] 16, wherein said first boundary pointer and said second boundary pointer are adjusted so as to increase the size of said first buffer and said second buffer on the basis of a 1:1 correspondence with the amount of incoming data.

20. (Original) The method of storing data in a first-in, first-out memory of claim 16, wherein said first boundary pointer and said second boundary pointer are dynamically varied during operation in response to the amount of said incoming data to be stored.

21. (New) The first-in, first-out memory device of claim 1,

wherein the plurality of boundary pointers are capable of changing in a circulating fashion within an address location of the ring buffer.

I. **The Rejection Of Claims 1-5 and 11-15 Under 35 U.S.C. § 102**

Claims 1-5 and 11-15 stand rejected under 35 U.S.C. § 102 as being anticipated by Kornher, USP No. 6,094,695. Applicant respectfully submits that, as amended, claims 1 and 11 are patentable over the cited prior art reference for the following reasons.

As recited by claim 1, and described on, for example, Figure 4A-4D of the specification, the first-in, first-out memory device of the present invention includes "the boundary pointer, which is capable of changing in a circulating fashion within the plurality of address location of the ring buffer." In contrast, the adjustable boundary of Kornher is only incremented by one or decremented by one (See Fig.3). Kornher is completely silent as to a boundary pointer being capable of changing in a circulating fashion.

Applicant respectfully submit that, as amended, claim 11 is patentable over the cited prior art reference for substantially the same reason as Claim 1.

Accordingly, as anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, ***Kalman v. Kimberly-Clark Corp.***, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), for the foregoing reasons, it is clear that Kornher does not anticipate amended claims 1 and 11, nor any claim dependent thereon.

## II. The Rejection Of Claims 6-10 and 16-20 Under 35 U.S.C. § 102

Claim 6-10 and 16-20 stand rejected under 35 U.S.C. § 102 as being anticipated by O'Neill, WO 96/38778 A1. Applicant respectfully submits that, as amended, claims 6 and 16 are patentable over the cited prior art reference for the following reasons.

As recited by claim 6, and described on, for example, Figure 4A-4D of the specification, the first-in, first-out memory device of the present invention includes "a ring buffer, which acts as one ring, having a plurality of address locations for storing incoming data." In contrast, O'Neill disclose a memory array which consists of plurality of ring buffers. With regard to O'Neill, each of address locations, for example, Tx of 1, Rx of 1 and Tx of 2 in Fig.2, acts as one ring buffer, but the memory array as a whole does not act as one ring buffer.

Applicant respectfully submits that, as amended, claim 16 is patentable over the cited prior art reference for the substantially same reason as Claim 6.

Accordingly, as anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, ***Kalman v. Kimberly-Clark Corp.***, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), for the foregoing reasons, it is clear that O'Neill does not anticipate amended claims 6 and 16, nor any claim dependent thereon.

## III. Request For Notice Of Allowance

Having fully responded to all matters raised in the Office Action, Applicant submits that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicant's attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,
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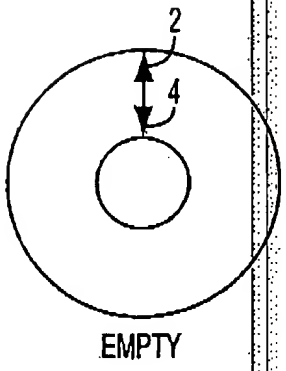
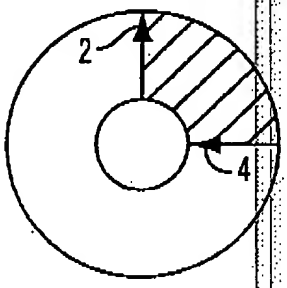
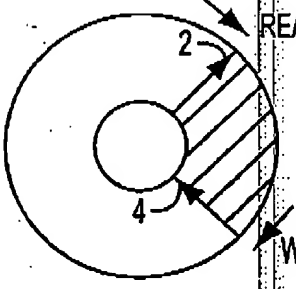
REPLACEMENT SHEET



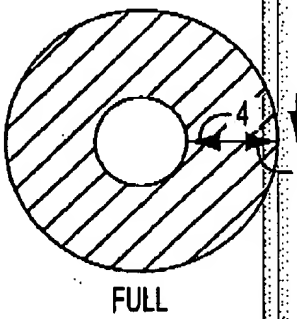

(Prior Art) FIG. 1A




(Prior Art) FIG. 1B




(Prior Art) FIG. 1C




(Prior Art) FIG. 1D

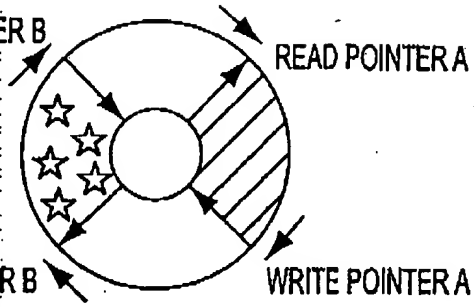



FIG. 2A
(Prior Art)

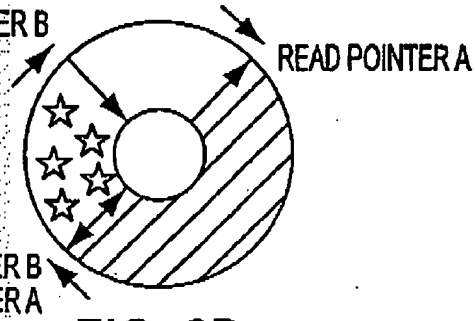



FIG. 2B
(Prior Art)